



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/856,545	05/22/2001	Hartwig Schlesiger	M0-6342/WW-5	9717

157 7590 02/11/2003

BAYER CORPORATION
100 BAYER ROAD
PITTSBURGH, PA 15205

EXAMINER

KRISHNAN, GANAPATHY

ART UNIT	PAPER NUMBER
----------	--------------

1623

DATE MAILED: 02/11/2003

7

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/856,545

Applicant(s)

SCHLESIGER, HARTWIG

Examiner

Ganapathy Krishnan

Art Unit

1623

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-3, 5, 7-9 and 12-15 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5, 7-9 and 12-15 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____. | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

The Amendment B filed November 6, 2002 has been received, entered into the record and carefully considered. The following information provided in the amendment affects the instant application:

1. Claims 4, 6, 10 and 11 have been cancelled without prejudice.
 2. New claims 14 and 15 have been added.
 3. Remarks drawn to rejections under U.S.C. 112 first paragraph and U.S.C. 103.
- Claims 1-3, 5, 7-9 and 12-15 are pending.

Claim Rejections - 35 USC § 112

In view of the applicants amendments the rejection of Claims 1, 2, 5 and 12 under 112 second paragraph are withdrawn.

Claims 13 and 14 still stand rejected under USC 112 second paragraph.

Claim 13, which is pending after the amendment is dependent on Claim 6, which has been cancelled. New Claim 14 is a substantial duplicate of Claim 13.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 1623

Claims 1-3, 5, 7-9 and 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Angerer et al (USPN 5,480,984) in combination with Hilbig et al (USPN 5,708,162), Gill (953944) of record and Janocha et al (DE 1543116) newly cited.

Claims 1-3, 5, 7-9 and 12-15 are drawn to a process for the production of low-viscosity water-soluble cellulose ethers by oxidative decomposition of higher-viscosity cellulose ethers by forming a mixture at 65-125°C comprising higher-viscosity cellulose ethers and aqueous hydrogen peroxide with a hydrogen peroxide content of 0.1-10 wt. % relative to dry cellulose ether and a solid content of the mixture being 25 wt. % relative to the total quantity of the mixture; agitating the mixture continuously at the said temperature until approximately at least 90% of hydrogen peroxide has been spent; wherein the mixture is agitated continuously at temperatures of 75-100 °C; wherein the pH of the mixture is set at more than 4.5; wherein the water soluble cellulose is selected from carboxymethyl cellulose, hydroxyethyl carboxymethyl cellulose, sulfoethyl cellulose, hydroxyethyl sulfoethyl cellulose, hydroxyethyl cellulose, methyl cellulose, methylhydroxyethyl cellulose, methylhydroxyethyl sulfoethyl cellulose, methylhydroxypropyl cellulose, hydroxypropyl cellulose, hydrophobically modified forms of these and mixtures thereof; water -wet filter cakes of above mentioned celluloses; wherein 0.2 to 2.5 wt. % of hydrogen peroxide relative to dry cellulose ether is used; a higher-molecular cellulose ether with a solid content of 40 to 55 wt. % in relation to total quantity of cellulose ether and solvent is used; the process where the pH is 6 to 7 and a process wherein the second solution contains alkali salts.

Art Unit: 1623

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Angerer et al teach a process for producing low viscosity water-soluble polysaccharide products via the oxidation of cellulose ethers (with percent solids greater than 5%) with aqueous hydrogen peroxide as the oxidizing agent (see entire document). The oxidative decomposition is carried out by heating a mixture of the cellulose ether and hydrogen peroxide in water at 80 °C, with continuous agitation. The oxidative decomposition is also carried out by adding a mixture of peroxide and cellulose ether in stages. The percentage of hydrogen peroxide used is also in the range instantly claimed. Since the reaction is performed in aqueous solution, the pH of the mixture should be close to 7 (see Examples 1-4). The polysaccharide decomposed in the reaction is chosen from a wide variety of cellulose ethers and hydrophobically modified varieties of them (see col. 6. claim 4).

However, Angerer et al do not explicitly say that the starting cellulose ethers of their invention have a high viscosity and also do not teach the oxidative decomposition of water-wet filter cakes of the cellulose ethers.

Gill teaches (see entire document) reduction of viscosity of water-soluble cellulose ethers using aqueous hydrogen peroxide in the temperature range 70-100 °C (see table 1, page 3 and examples) at a pH of between 5 and 9 (see claim 8, page 4).

Hilbig et al teach the oxidative degradation of high viscosity polysaccharides using perborate as the oxidizing agent, to give low-viscosity polysaccharides (see col.3. lines 36-52; col. 7, lines 40-48 and Examples 2-8). Even though perborate is used as the oxidizing agent in this invention, the same results can be achieved with hydrogen peroxide.

Janocha et al teach the process for making low-viscosity cellulose ethers using 0.1 to 10% weight percent of hydrogen peroxide (see claim 1, page 11). They also teach the adjustment of pH from 9-11 (see claim 6, page 12). Even though the pH range mentioned by Janocha is 9-11, one of ordinary skill in the art can adjust it to any desired range for optimizing the process. Even though Angerer and Gill use higher percentages compared to the instant process, the concentration of the reagents used in the process can also be adjusted for the purpose of optimizing the process and product quality.

Claim 15 recites alkali salts which are all well known components as a buffer in the chemical arts. One of ordinary skill in the art can use those in the process for adjustment of pH even though it is not taught by the prior art of record.

Thus, the teachings of Angerer, Hilbig and Gill in combination with Janocha render obvious the process of producing low-viscosity cellulose ethers as instantly claimed.

Applicants arguments with respect to claims 1-3, 5, 7-9 and 12-14 have been considered but are not found to be persuasive.

Hilbig mentions the decomposition of hydrogen peroxide as a disadvantage in the process. This does not necessarily mean that hydrogen peroxide cannot be used at all. One of ordinary skill in the art can adjust the concentration of hydrogen peroxide to compensate for the decomposition by adding some more in the process as is done in the instant process.

Art Unit: 1623

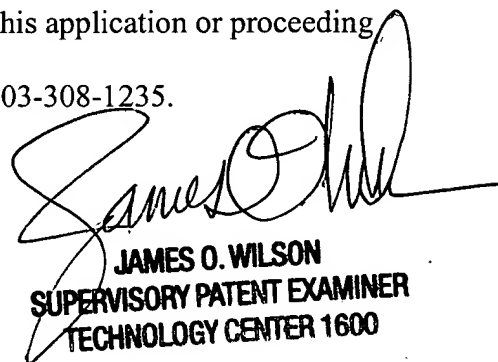
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ganapathy Krishnan whose telephone number is 703-305-4837.

The examiner can normally be reached on 8.30am-5pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James O. Wilson can be reached on 703-308-4624. The fax phone numbers for the organization where this application or proceeding is assigned are 703-305-3014 for regular communications and 703-305-3014 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-1235.

GK
February 10, 2003



JAMES O. WILSON
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 1600